

Notice of Allowability

Application No.

09/870,085

Examiner

Thanhha Pham

Applicant(s)

YANO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/01/2004 and interview dated 01/11/2005.
2. ☒ The allowed claim(s) is/are 1,3,4,28-30,34-37,39-44 and 46-55.
3. ☒ The drawings filed on 25 August 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Grace Pan on 01/11/2005.

The application has been amended as follows:

- In claim 1,

line 6, after "the target substrate" insert -- , said selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate --

- Cancel claim 2

- In claim 3,

lines 4-5, delete "a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate and then"

line 6, delete "is carried out"

- In claim 4,

line 7, change "a" to -- the --

- Cancel claims 5-6, 23-26, 27

- In claim 28,
line 2, change "27" to –1 –
- Cancel claims 31-33
- In claim 35,
line 8, after "of multi-layered films" insert -- , said selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate –
- In claim 36,
lines 4-5, delete "a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate and then"
line 6, delete "is carried out"
- In claim 37,
line 7, change "a" to – the –
- Cancel claim 38
- In claim 39,
line 2, change "38" to – 35 –
- In claim 42,
line 7, after "the target substrate" insert -- , said selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying anisotropic dry etching treatment to

form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate –

- In claim 43,

lines 4-5, delete “a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate and then”

line 6, delete “is carried out”

- In claim 44,

line 7, change “a” to – the –

- Cancel claim 45

- In claim 46,

line 2, change “45” to – 42 –

Allowable Subject Matter

2. Claims 1, 3-4, 28-30, 34-37, 39-44, 46-55 are allowed.

3. The following is an examiner's statement of reasons for allowance: Recorded Prior Art fails to disclose or suggest the combination of the process steps of manufacturing a semiconductor device as cited in the base claim 1 including selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of a target substrate including a semiconductor substrate wherein a film formed on the peripheral portion and the beveled portion is removed under a condition that the film has non-selectivity to the target substrate, said selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target

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substrate is carried out after applying anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate. Recorded Prior Art also fails to disclose or suggest the combination of the process steps of manufacturing a semiconductor device as cited in the base claim 30 including after depositing the polysilicon film, selective grinding or polishing the peripheral portion and the beveled portion on the main surface side of a target substrate including a semiconductor substrate, wherein the insulating film remaining on the peripheral portion and the bevel portion is removed under a condition that the insulating film and the polysilicon film have non-selectivity to the semiconductor substrate.

Recorded Prior Art fails to disclose or suggest the combination of the process steps of manufacturing a semiconductor device as cited in the base claim 35 including selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of a target substrate including a semiconductor substrate, wherein at least an uppermost layer of multi-layered films formed on the peripheral portion and the beveled portion is removed under a condition that that at least uppermost layer of the multi-layered film has non-selectivity to a layer of the multi-layered films which is under the uppermost layer of multi-layered films, said selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate. Recorded Prior Art also fails to disclose or suggest the combination of the process steps of manufacturing a semiconductor device as cited in the base claim

42 including selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of a target substrate including a semiconductor substrate, wherein multi-layered films formed on the peripheral portion and the beveled portion are removed under a condition that the multi-layered films has non-selectivity to the target substrate, said selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhha Pham whose telephone number is (571) 272-1696. The examiner can normally be reached on Monday and Thursday 9:00AM - 9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

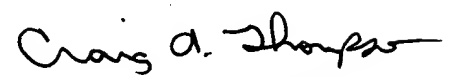
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thanhha Pham


CRAIG A. THOMPSON
PRIMARY EXAMINER